



# INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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February 26, 2013

Nuria Muniz  
U.S. EPA Region V  
Mail Code SR-6J  
77 West Jackson Boulevard  
Chicago, IL 60604

Re: Webb Well Field  
Franklin, Johnson County, IN  
Expanded Site Inspection

Dear Mrs Muniz:

## SITE SUMMARY

The Webb Well Field is a municipal well field owned by Indiana American Water Company in Franklin Indiana. In 1988, wells number 2 and 3 of the Franklin Well Field began to show levels of cis-1,2-Dichloroethylene (cis-1,2-DCE) and Trans-1,2-Dichloroethylene (trans-1,2-DCE) in raw water samples above the Maximum Contaminant level established under the Clean Water Act. The other well in the Webb Well Field, Well Number 5, exhibited no contamination.

The Webb Well Field sits in the middle of a large farm field with no apparent sources of contamination evident nearby. Wells number 2 and 3 are separated from well number 5 by Hurricane Creek which dissects the well field. An industrial area of Franklin's north east side is approximately one mile south west of the well field.

On October 30, 31, and November 1 2012, the Indiana Department of Environmental Management (IDEM) conducted an Expanded Site Inspection (SI) of the Webb Well Field under authority of the Comprehensive Response Compensation and Liability Act of 1980 (CERCLA). The purpose of this ESI report was to evaluate the potential source area identified during the Site Inspection (SI) of the Webb Well Field.

The ESI has identified an observed release from one potential source area within the one year time of travel well head protection area of the Webb Well Field.

Sincerely,

Steve McIntire, Project Manager  
Site Investigation Section  
Office of Land Quality

SM/bl  
cc: Gloria Willis, EPA

**EXPANDED SITE INSPECTION REPORT**

**FOR**

**WEBB WELL FIELD  
FRANKLIN, INDIANA  
JOHNSON COUNTY  
U.S. EPA ID: INN000510423**

**PREPARED BY:**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF LAND QUALITY  
REMEDIAL SERVICES BRANCH  
FEDERAL PROGRAMS SECTION  
SITE INVESTIGATION PROGRAM**

February 22, 2013

Updated January 28, 2014

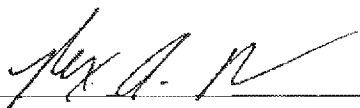
Signature Page For  
Webb Well Field  
Franklin, Indiana

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## SECTION 1.0 INTRODUCTION

The Site Investigation Program of the Indiana Department of Environmental Management (IDEM), under a Cooperative Agreement (CA) with the United States Environmental Protection Agency (U.S. EPA), Region V, has been funded to perform inspections at certain sites listed in the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS). This work is conducted under the authority of the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 (Superfund), and the Superfund Amendments and Reauthorization Act (SARA) of 1986. Typically, a Preliminary Assessment (PA) is completed, and if the site is not given a “No Further Remedial Action Planned” (NFRAP) status, it will go on to a sampling inspection called a Site Inspection (SI). Those sites for which the screening Site Inspection did not conclude a NFRAP priority, an Expanded Site Inspection (ESI) is conducted.

The primary objectives of the ESI work are:

- To collect all data necessary to prepare a Hazard Ranking System (HRS) scoring package to determine whether the site is eligible for placement on the National Priorities List (NPL).
- To identify sites that may require removal actions to address immediate threats to human health and/or the environment.
- In some cases an ESI will be conducted to address critical hypotheses or assumptions that were not completely supported during the SI.

The Site Investigation Program was given approval by the U.S. EPA to conduct an ESI at the Webb Well Field site, located northeast of the town of Franklin in Johnson County, Indiana. Volatile Organic Compounds (VOCs) were detected in municipal wells 2 and 3 of the Webb Well Field. The detection of VOCs occurred during routine sampling conducted by the Indiana American Water Company (IAWC) for IDEM’s Ground Water Program in compliance with the Clean Water Act, beginning in 1988 (Refer to Appendix G).

Information contained within this report will be used to evaluate this site to support a site decision regarding the need for further Superfund action, including the possibility for the Webb Well Field site to be considered for inclusion on the NPL.

## **SECTION 2.0 SITE BACKGROUND**

### **Section 2.1 Introduction**

This section presents information obtained from the IDEM files, discussions with IAWC representatives, and site reconnaissance visits.

### **Section 2.2 Site Description and Location**

The Webb Well Field is located approximately 1 mile northeast of the town of Franklin, Johnson County, Indiana (Refer to Appendix A, Site Location Map). The water supply for the town of Franklin and a significant part of Johnson County is provided by the IAWC and, in the past, came partially from the Webb Well Field.

Franklin is a rural but growing town approximately 25 miles south of Indianapolis. The terrain around Franklin is topographically flat to slightly rolling. The Webb Well Field consists of three wells, numbered 2, 3, and 5, and is bordered by farm fields on the north, south, east, and west. Hurricane Creek transects the farm fields and splits well number 5 from wells 2 and 3 in the well field. Hurricane Creek flows within 30 feet of the nearest well (well number 2) on the east. The Webb Well Field lies north east of the town of Franklin but is rapidly being surrounded by outward expansion of the town.

Resident of Franklin utilizes ground water from both municipal and private wells as its only source of water for consumptive use. In 1988, cis-1,2-DCE contamination was discovered in the drinking water of municipal wells 2 and 3 in the Webb Well Field which services Franklin and some surrounding area, in Johnson County.

### **Section 2.3 Site History**

In April 2007, the IDEM Ground Water Section notified the Site Investigation Program that cis-1,2-dichloroethylene (cis-1,2-DCE) and trans-1,2-dichloroethylene (trans-1,2-DCE) were detected in wells 2 and 3 of the Webb Well Field at levels above U.S. EPA's maximum contaminant levels (MCL), which are 70 and 100 parts per billion (ppb) respectively. The Webb Well Field contaminant problem was revealed through regular sampling of the public water supply sources. This sampling is a requirement of the U.S. EPA for community water systems. The data collected was part of a regular monitoring program conducted by IAWC to comply with the Safe Drinking Water Act. Detections of these contaminants began in 1988 and continued until the wells were removed from service in 2007. The concentrations of cis-1,2-DCE in Webb well number

2 exceeded its MCL beginning in 2000. The concentrations of cis-1,2-DCE fluctuated above and below the MCL several times and exceeded the MCL on its final testing in 2007 after which it was taken off line. The concentrations of cis-1,2-DCE in Webb well number 3 exceeded its MCL several times from 1991 to 1996. In 2006, the concentration of cis-1,2-DCE began fluctuating above and below the MCL and exceeded the MCL on its final testing in 2007 after which it was taken off line. Wells 2 and 3 were taken off line in 2007 as a result of the contamination but were being kept for use in an emergency situation if needed. These contaminants were also detected in the finished Webb Well Field water (effluent) but never above either MCL. As noted in the Webb SI report, the pumps for Webb wells 2 and 3 failed during the attempt to collect samples during the SI sampling event and were not sampled. Based on information collected, wells 2 and 3 have not been operated or maintained since 2007.

The former Hougland Tomato Packing Plant property is approximately  $\frac{1}{4}$  to  $\frac{1}{2}$  mile west of the Webb Well Field and is approximately 19 acres in size. The property is within the one year time of travel of the well field. The former Hougland tomato packing plant (a former cannery) is identified as Reed Mfg. Services and Crossroads Recycling in the Webb Well Field PA. Many different historical operations have existed in that location and possibly many different chemicals have been used on the property. The property is now occupied by a recycling center and a steel fabricator. The eastern portion of the property where the packing plant stood is still unimproved. Historical aerial photos provided to IDEM by IWM consulting (Refer to Appendix I), an environmental consultant representing Amphenol, a nearby factory, show that this portion of the property was an auto salvage yard in the 1990s. Throughout the last 55-60 years this property has been excavated, filled, and disturbed numerous times. A 1941 aerial photo shows pits or standing water within 100 feet of an area sampled during the SI. These pits were filled by 1956. These two parcels will be referred to as the former tomato plant property and share a common reference address of 1130 E. Eastview Drive in the remainder of this report (Refer to Appendix A, Site Location Map).

## **Section 2.4 Previous Investigations**

A Pre-CERCLIS Screening and a Preliminary Assessment (PA) were conducted on the site in 2009 and early 2010. The PA identified many potential sources for the contamination in the northeast section of Franklin but no readily apparent responsible facility.

In October of 2010, Site Investigation Program staff performed a Site Inspection (SI) in the area of the Webb Well Field. Subsurface soils, residential wells, monitoring wells, and a municipal well sample were collected to determine the presence of hazardous

substances at potential source area locations and in the possible migration pathways. In addition, information was collected to confirm target populations and environments potentially at risk from the site. Cis-1,2-DCE and trans-1,2-DCE were detected in wells 2 and 3 during past monitoring by IAWC. Soil samples collected during the SI from an open field west of the well field and adjacent to the former Hougland tomato packing plant contained PCE. Ground water from the same location contained low levels of cis-1,2-DCE. No other samples or borings contained any contaminants relatable to those found in the Webb Well Field. No readily apparent sources of the contamination were identified based on the results of the SI event.

The Webb Well Field SI gathered information necessary to evaluate the site as a candidate for the NPL. Subsurface soils, residential wells, monitoring wells, and a municipal well sample were collected to determine the presence of hazardous substances at potential source area locations and in the possible migration pathways. In addition, information was collected to confirm target populations and environments potentially at risk from the site.

During the SI an electrical malfunction occurred rendering the pumps in wells 2 and 3 unusable. Therefore, samples could not be taken to confirm the contamination in municipal wells 2 and 3, which were sealed. The wells had not been sampled since 2007 but the last sample from well number 2 contained cis-1,2-DCE at 96.2 ppb and the last sample from well number 3 contained cis-1,2-DCE at 75.1 ppb (refer to Appendix G). Well number 5, also from the Webb Well Field, which historically showed only minor detections of contaminants, was sampled during the SI field event. Analytical results from that sample revealed no contamination.

No source of contamination was determined during the SI event. Subsurface soil samples collected from the open field west of the well field and adjacent to the former Hougland tomato packing plant on the east contained PCE, and ground water from the same location contained low levels of cis-1,2-DCE. No other samples or borings contained any contaminants relatable to those found in the Webb Well Field. All residential well samples were uncontaminated.

Based on the confirmed detections of cis-1,2-DCE and trans-1,2-DCE in wells 2 and 3 during past monitoring by IAWC and the current presence of PCE and low levels of cis-1,2-DCE in the boring approximately 1,500 feet west of the wells, evidence suggests that contamination from that direction may have been drawn to wells 2 and 3 during peak or routine pumping of the wells.

## **SECTION 3.0 FIELD OBSERVATIONS, SAMPLING PROCEDURES, AND ANALYTICAL RESULTS**

### **Section 3.1 Introduction**

This section outlines the procedures, observations, and analytical results of the Webb Well Field ESI in accordance with the Webb Well Field Work Plan dated November 9, 2011, and the Quality Assurance Project Plan (QAPP) dated April 30, 2008. IDEM's direct push drill rig was utilized to collect subsurface soil and ground water samples. Indiana Underground Plant Protection Service (IUPPS) was contacted and called to the study area to identify any underground hazards prior to drilling.

### **Section 3.2 Sampling Procedures and Analytical Results**

On October 30, 31, and November 1, 2012, ground water and subsurface soil samples were collected by IDEM staff. The samples were analyzed for VOCs only.

Weather conditions throughout the sampling event were generally sunny with temperatures in the 50s. The samples were shipped by Federal Express to the assigned U.S. EPA Contract Laboratories Program (CLP) laboratory (KAP Technologies, Inc., The Woodlands, Texas). The laboratory results were reviewed and evaluated for the quality criteria contained in the QAPP and the results were determined to be acceptable for use.

The contract laboratory program analytes and the analytical results for ground water and subsurface soil samples are provided in Appendix D, Analytical Data.

### **3.3 Subsurface Soil Samples**

On October 30, 31, and November 1, 2012, IDEM collected ten (10) subsurface soil samples. Soil cores were collected from nine (9) locations using direct push drilling methods. Soil cores were logged in the field (Refer to Appendix F). The site geologist observed and described the soil lithology in order to determine the most appropriate sampling depth. Due to the lack of observable contamination characteristics and/or analytical field instrument indication, the geologist selected the soil with the most apparent porosity and permeability. Selected soil samples were obtained from above the water table. The soil was then collected with three (3) soil sampler kits according to IDEM Site Investigation QAPP protocol (Refer to Appendix C).

The subsurface soil sample locations are shown in Appendix A, Sample location and Soil Concentration Map. SI staff collected ten (10) subsurface soil samples, including one (1) duplicate sample (S-9), one (1) MS/MSD sample, and three (3) background samples (S-1, S-2, and S-10) (Refer to Appendix E). All samples were analyzed for CLP VOCs. The samples are identified as S-1 through S-10 (Refer to Appendix B, Table 1).

Standard Quality Assurance and Quality Control (QA/QC) procedures for Site Inspection field activities were followed during the investigation. Soil drilling log sheets can be found in Appendix F.

Subsurface soil samples were collected from two adjacent parcels in the area of the former Hougland tomato packing plant solely in attempt to establish potential source areas at depths shallower than the water table but deeper than 2 feet, (Refer to Appendix A, Sample Location and Soil Concentration Map). Both parcels have the same owner and were identified as the former Hougland tomato packing plant property in the SI report.

PCE was detected in soil sample S-3. TCE was detected in soil samples S-3, S-6, S-7, and S-9. The range of TCE detected in soil samples was 10 to 29 ppb. Cis-1,2-dichloroethene (cis-1,2-DCE) was detected in soil samples S-6 and S-9. Trans-1,2-dichloroethene (trans-1,2-DCE) was detected in soil sample S-6 (Refer to Appendix A, Sample location and Soil Concentration Map and Appendix B, Table 2).

Two additional properties west of the potential source properties were used as subsurface soil background locations. The background sample locations are shown in Appendix A, Sample location and Soil Concentration Map and identified as S1, S2, and S10. No contaminants were detected at levels greater than the sample quantitation limit in the background subsurface soil samples.

The subsurface soil Key Findings List summarizing contaminant concentrations detected above levels three (3) times background is included in Appendix B, Table 3. The background subsurface soil Key Findings List is included in Appendix B, Table 4.

Based upon subsurface soil sample results from this ESI, the former tomato packing plant property potential source area may be a source area for the Webb Well Field.

A brief summary of subsurface soil sample results can be found below. A larger more detailed table is located in Appendix B, Table 2.

Sample Number	S-3		S-4		S-5		S-6		S-7	
Sample Location	The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.	
Location Description	Potential Source		Potential Source		Potential Source		Potential Source		Potential Source	
Sample Depth (ft.)	22-23		17		10.5-11.5		7.5-8.5		12	
Matrix	Soil		Soil		Soil		Soil		Soil	
Units	ug/l		ug/l		ug/l		ug/l		ug/l	
Date Sampled	10/31/12		10/31/12		11/1/12		11/1/12		10/31/12	
Volatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
PCE	<b>39</b>		3.5	U	4.1	U	8.8	U	4.6	U
TCE	<b>29</b>		3.5	U	0.78	J	<b>10</b>		<b>11</b>	
Cis-1,2-DCE	6.8	U	3.5	U	4.1	U	<b>150</b>		4.6	U
Trans-1,2-DCE	6.8	U	3.5	U	4.1	U	<b>12</b>		4.6	U
Bold type entries exceeded their representative CRQLs										

Sample Number	S-8		S-9		S-1		S-2		S-10	
Sample Location	The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		1691 Amy Lane		1035 Hurricane Road		1035 Hurricane Road	
Location Description	Potential Source		Potential Source		Back Ground		Back Ground		Back Ground	
Sample Depth (ft.)	11-12		7.5-8.5		Not Recorded		12		7-8	
Matrix	Soil		Soil		Soil		Soil		Soil	
Units	ug/l		ug/l		ug/l		ug/l		ug/l	
Date Sampled	10/31/12		11/1/12		10/30/12		10/30/12		10/30/12	
Volatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
PCE	4.6	U	8.7	U	5.3	U	4.9	U	4.4	U
TCE	3	J	<b>15</b>		5.3	U	4.9	U	4.4	U
Cis-1,2-DCE	4.6	U	<b>110</b>		5.3	U	4.9	U	4.4	U
Trans-1,2-DCE	4.6	U	7.4	J	5.3	U	4.9	U	4.4	U
Bold type entries exceeded their representative CRQLs										

### 3.4 Ground Water Samples

On October 30, 31, and November 1, 2012, IDEM collected ten (10) ground water samples from nine (9) locations in a grab fashion. Ground water samples were collected through a temporarily emplaced polyvinyl chloride riser and screen or through a temporarily emplaced stainless steel screen beneath the water table in the first water bearing alluvial aquifer unit encountered. Ground water was brought to the surface through the use of a peristaltic pump. Ground water samples were collected in three (3) 40-milliliter vials preserved with hydrochloric acid (HCL) (Refer to Appendix C).

The ground water sample locations are shown in Appendix A, Sample location and Groundwater Concentration Map. IDEM staff collected ten (10) ground water samples from commercial properties, including one (1) duplicate sample (GW-9), one (1) MS/MSD sample, and three (3) background samples (GW-1, GW-2, and GW-10) (Refer to Appendix E). All samples were analyzed for CLP VOCs. The samples are identified as GW-1 through GW-10. (Refer to Appendix B, Table 5).

Standard Quality Assurance and Quality Control (QA/QC) procedures for Site Inspection field activities were followed during the investigation.

PCE was detected in ground water sample GW-3 at 73 ppb. TCE was detected in ground water samples GW-3, GW-5, GW-6, GW-7, GW-8, and GW-9. The range of TCE detected in ground water samples was 3 to 87 ppb. Cis-1, 2-dichloroethene was detected in ground water sample GW-3, GW-5, GW-6, and GW-9. Trans-1,2-dichloroethene was detected in ground water sample GW-93 at 0.62 ppb. (Refer to Appendix B, Tables 6).

PCE, TCE, cis-1,2-DCE and trans-1,2-dichloroethene were detected at levels greater than the CRQL level at the former tomato plant property potential source area. These contaminants were not detected in background ground water samples collected.

The ground water Key Findings List summarizing contaminant concentrations detected above levels three (3) times background is included in Appendix B, Table 7. The background ground water Key Findings List is included in Appendix B, Table 8.

A brief summary of ground water sample results can be found below. A larger more detailed table is located in Appendix B, Table 6.

Sample Number	GW-3		GW-3 Diluted		GW-4		GW-5		GW-5 Diluted		GW-6	
Sample Location	The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.	
Location Description	Potential Source		Potential Source		Potential Source		Potential Source		Potential Source		Potential Source	
Sample Depth (ft.)	23 - 25		23 - 25		12.5		12 - 13		12 - 13		9.5 - 10	
Matrix	Water		Water		Water		Water		Water		Water	
Units	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Date Sampled	10/31/2012		10/31/2012		10/31/2012		11/1/2012		11/1/2012		11/1/2012	
Dilution Factor	4		5		1		1		10		1	
Volatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
PCE	<b>73</b>		<b>55</b>		0.50	U	<b>0.4</b>	J	5.0	U	0.50	U
TCE	<b>92</b>	J	<b>87</b>		0.50	U	<b>51</b>	J	<b>35</b>		<b>2.4</b>	
cis-1,2-DCE	<b>2.8</b>		<b>2.3</b>	J	0.50	U	<b>1.7</b>	U	5.0	U	<b>1.2</b>	
Trans, 1-2-DCE	2.0	U	2.5	U	0.50	U	0.23	J	5.0	U	0.50	U
Bold type entries exceeded their representative CRQLs												

Sample Number	GW-7		GW-7 Diluted		GW-8		GW-8 Diluted		GW-9		GW-1	
Sample Location	The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		The former tomato plant property. 1130 E. Eastview Dr.		1691 Amy Lane	
Location Description	Potential Source		Potential Source		Potential Source Area		Potential Source Area		Potential Source Area		Back Ground	
Sample Depth (ft.)	12.5		12.5		12.5		12.5		9.5 - 10		Not Available	
Matrix	Water		Water		Water		Water		Water		Water	
Units	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Date Sampled	10/31/2012		10/31/2012		10/31/2012		10/31/2012		10/31/2012		11/1/2012	
Dilution Factor	2		10		4		10		1		1	
Volatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
PCE	1.0	U	5.0		2.0	U	5.0	U	0.50	U	0.50	U
TCE	<b>60</b>	J	<b>70</b>		<b>82</b>	J	<b>75</b>		<b>3</b>	U	0.50	U
cis-1,2-DCE	1.0	U	5.0	U	2.0	U	5.0	U	<b>5.4</b>		0.50	U
Trans, 1-2-DCE	1.0	U	5.0	U	2.0	U	5.0	U	<b>0.62</b>		0.50	U
Bold type entries exceeded their representative CRQLs												

Sample Number	GW-2		GW-10		GW-20		GW-21		GW-22		GW-23	
Sample Location	1035 Hurricane Road		1035 Hurricane Road									
Location Description	Back Ground		Back Ground		Trip Blank		Trip Blank		Equipment Blank		Trip Blank	
Sample Depth (ft.)	13.5		13.5		12.5		12.5		12.5		9.5 - 10	
Matrix	Water		Water		Water		Water		Water		Water	
Units	ug/l		ug/l		ug/l		ug/l		ug/l		ug/l	
Date Sampled	11/1/2012		11/1/2012		10/31/2012		10/31/2012		10/31/2012		10/31/2012	
Dilution Factor	10		10		10		4		10		1	
Volatile Compound	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
PCE	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
TCE	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
cis-1,2-DCE	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Trans, 1-2-DCE	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U	0.50	U
Bold type entries exceeded their representative CROs												

### 3.5 Municipal Well Water Samples

None of the Webb Well Field municipal wells were sampled for this ESL. In April 2007, the Site Investigation Program was notified that cis-1,2-DCE and trans-1,2-DCE had been detected in wells 2 and 3 of the Webb Well Field at levels above the U.S. EPA's MCLs which are 70 and 100 parts per billion (ppb) respectively. All wells in the Webb Well Field were taken off line in 2007 as a result of the contamination but were being kept available for use in an emergency situation if needed.

Historic sample results from the Webb Well Field wells collected by IAWC show that cis-1,2-DCE and trans-1,2-DCE first appeared in wells #2 and #3 in 1988 and 1989. The first MCL exceedance of cis-1,2-DCE occurred in July 2000 in well #2. Well #2 continued to exceed the MCL for cis-1,2-DCE on numerous occasions until it was removed from service in August 2007. Well #3 first exceeded the MCL for cis-1,2-DCE in July 1991 and routinely exceeded the MCL until it was also removed from service in August 2007. Both wells #2 and #3 showed detections of trans-1,2-DCE but did not exceed its MCL at any time. Complete historic sample results for cis-1,2-DCE and trans-1,2-DCE from well #2 and #3 collected by the IAWC are contained in Appendix G. Only

Webb Well number 5 was sampled during the SI and no contamination was detected at that time.

According to IDEM's Drinking Water Branch website, the Webb Wellfield formerly pumped into the Indiana American Water Company distribution system which had 4 well fields. The distribution system has 28,966 service connections and supplies drinking water to a population of 78,208. Prior to the shutdown of the Webb Well Field, water was drawn from 22 ground water wells and the infrastructure had the ability to blend the water throughout the system. Assuming an equal distribution in the system, it is estimated that each well served approximately 3,555 residents while the Webb Well Field was active. After the Webb Well Field was removed from service, the drinking water is supplied by the remaining 19 ground water wells.

### **3.6 Surface Water Samples**

No surface water samples were collected as part of this ESI. No surface water samples were collected during the SI sampling event. The threat to the public from contamination to drinking water via the surface water route is very unlikely. The surface water and sediments associated with the human food chain do not appear to be at risk from this project's contaminant of concern. Generally, low levels of volatiles in moving surface water dissipate fairly rapidly via the mixing of the stream. There is no evidence that conditions at the Webb Well Field would have a significant effect on sensitive environments due to the contamination existing below surface.

## **SECTION 4.0 MIGRATION PATHWAYS**

### **Section 4.1 Introduction**

This section presents a discussion of pathways for contaminants migrating from the potential sources near the Webb Well Field contamination. Potential contaminant migration via Ground Water, Surface Water (including Drinking Water Threat, Human Food Chain Threat, and Environmental Threat), Soil Exposure and Air are discussed.

### **Section 4.2 Ground Water Pathway**

The Ground Water Pathway is the focus of this ESI. The Webb Well Field contamination stems from an uncontrolled release to ground water that has contaminated the municipal water supply for the town of Franklin. The targets associated with this investigation include several municipal well fields in the surrounding area and private

residential wells located near the Webb Well Field. Residences near the Webb Well Field but outside the service boundaries for Indiana American Water Company also use the same aquifer for their private drinking water supply.

The Webb Well Field is the primary target of the groundwater contamination. The two Webb Well Field municipal wells (2 and 3), which served an estimated population greater than five thousand (5,000) people, were taken off line due to contamination. All three production wells in the Webb Well Field are currently listed as inactive.

In April 2007, the IDEM Ground Water Section notified the Site Investigation Program that cis-1,2-dichloroethylene (cis-1,2-DCE) and trans-1,2-dichloroethylene (trans-1,2-DCE) were detected in wells 2 and 3 of the Webb Well Field at levels above U.S. EPA's maximum contaminant levels (MCL), which are 70 and 100 parts per billion (ppb) respectively. The Webb Well Field contaminant problem was revealed through regular sampling of the public water supply sources. This sampling is a requirement of the U.S. EPA for community water systems. The data collected was part of a regular monitoring program conducted by IAWC to comply with the Safe Drinking Water Act. Detections of these contaminants began in 1988 and continued until the wells were removed from service in 2007. The concentrations of cis-1,2-DCE in Webb well number 2 exceeded its MCL beginning in 2000. The concentrations of cis-1,2-DCE fluctuated above and below the MCL several times and exceeded the MCL on its final testing in 2007 after which it was taken off line. The concentrations of cis-1,2-DCE in Webb well number 3 exceeded its MCL several times from 1991 to 1996. In 2006 the concentrations cis-1,2-DCE began fluctuating above and below the MCL and exceeded the MCL on its final testing in 2007 after which it was taken off line. Wells 2 and 3 were taken off line in 2007 as a result of the contamination but were being kept for use in an emergency situation if needed. These contaminants were also detected in the finished Webb Well Field water (effluent) but never above either MCL. As noted in the Webb SI report, the pumps for Webb wells 2 and 3 failed during the attempt to collect samples during the SI sampling event and therefore the wells were not sampled. Wells 2 and 3 were not repaired and were not sampled during the ESI event. Based on information collected, wells 2 and 3 have not been operated or maintained since 2007.

Three other well fields (Sugar Creek Well Field, Orme/Marlin/White River Well Field, and London Road Well Field) are also owned and operated by IAWC. The Sugar Creek Well Field consists of six (6) production wells and is located approximately three and one-quarter (3.25) miles east of the Webb Well Field. The Orme/Marlin/White River Well Field consists of nine (9) wells and four (4) pumping centers and is located approximately twelve (12) miles northwest of the Webb Well Field. The London Road Well Field consists of four (4) wells located approximately seven (7) miles northeast of

the Webb Well Field. The London Road Well Field was recently developed to supplement the existing well fields in an effort to reduce reliance on the Webb Well Field and to meet increasing demand in Johnson and Shelby County. The IAWC has the capacity to blend the water from the three (3) well fields in an effort to minimize contaminants. The Towns of Franklin and Greenwood are now serviced by the blending of Sugar Creek Well Field, Orme/Marlin/White River Well Field, and London Road Well Field. Contaminants of concern have not been detected in these well fields, and they are not part of this investigation.

During the SI event, residents living near the Webb Well Field who use their own private water well were sampled. Ten (10) residential wells were sampled which serve approximately 26 residents based on the average household size of 2.63 persons in Johnson County. The depths of some of these wells were confirmed and were similar to the municipal wells. The wells with unconfirmed depths are assumed to be of similar depth based on the local geology. These wells are also considered potential targets of the contamination plume since they draw water from aquifers of similar depths. All residential wells sampled were uncontaminated.

The Webb Well Field is located in Johnson County in south-central Indiana within the New Castle Till Plains and Drainageways physiographic region (Gray, 2001). Topographically, the till plain is nearly flat, but undulates due to the presence of low interspaced hills eroded by post-glacial streams. From hill tops to river bottoms, ground surface elevations range from approximately 780 to 720 ft. above mean sea level (msl). Modern surface soils that developed on the unlithified (unconsolidated) post-glacial landscape provide useful information for interpreting and understanding the local geology. Soil types that occur in repeating patterns and close geographic proximity are often mapped as units called soil associations. Four (4) main soil associations occur in the vicinity of the Webb Well Field. The Genesee - Eel and Genesee Shoals associations are soils developed on level flood plains and river channels that are well to somewhat poorly drain. Soils consist of nonglacial stream sediments (alluvium) consisting of clay, silt, sand and gravel that accumulated since the end of the last glaciation. These areas are subject to frequent flooding (USDA, 1979).

Similar to the soil associations just described, Fox-Ockley-Nineveh and Ockley-Fox soils are well drained. These soils formed on level plains to moderately sloping terraces consisting of deep to very deep loamy outwash overlying stratified (pancake) layers of sand and gravel. Outwash is deposited in front of advancing and retreating glaciers to form channels allowing melt water to flow downstream. Due to increased permeability, outwash has the ability to allow moisture and contamination to spread

vertically downward to deposits beneath. Thick glacial outwash sediments are present within nearby Hurricane and Sugar Creeks.

Less well-drained, Miami-Fincastle and Crosby-Miami soil associations are present on nearly level to moderately steep uplands. These soils developed in thin to thick layers of silt overlying glacial till. In Indiana, windblown accumulations of silt are called loess, and till is the accumulation of fine to boulder sized sediments deposited by the advance and retreat of glacial ice over the land surface. As a general rule, tills lack the permeability necessary to allow moisture and contamination to quickly spread vertically downward.

Even less well drained are soils representing Rensselaire-Whitaker, Westland-Sleeth and Crosby-Brookston associations. The drainage potential of these soils varies from somewhat to very poorly drained. These soils formed on nearly level and gently sloping terraces and uplands. While the Rensselaire-Whitaker and Westland-Sleeth soils formed in loamy (roughly equivalent amounts of clay, silt, and sand with organic material) outwash overlying permeable stratified layers of silty, loamy, sandy or gravel sediments, the Crosby-Brookston association is formed in thin layers of silt and in underlying glacial till. Beneath alluvial sediments that occur in stream and river channels and on adjacent floodplains, fine to coarse grained sediments of the earlier Atherton Formation were deposited by glacial melt waters forming outwash plains (Gray, 1989). Formations are deposits of similar character and form that can be mapped over a large area. Typical thicknesses of 100 ft. and more have been documented for the Atherton Formation (Shaver and others, 1970). Adjoining sediments of the Atherton, modern soils described above are developed on glacially derived tills of the Trafalgar Formation. Unconsolidated deposits of this formation are present regionally and are Wisconsinan age dating 17,000 to 23,000 years old (Shaver and others, 1970). Below the till ground moraine of the Trafalgar, unconsolidated deposits of the Jessup Formation are present. Although predominantly till, the Jessup Formation includes minor lenses of silt, sand and gravel. The Jessup includes pre-Wisconsinan glacial deposits of earlier glacial events previously known as the Illinoian and Kansan Stages. Deposits of the Jessup are recognizable by the occurrence of distinctive paleosols and weathering features on their upper contacts with Wisconsinan deposits above.

Unconsolidated deposits of the Jessup Formation rest directly upon lithified bedrock of Devonian and Mississippian age (Shaver and others, 1970), or as old as 417 million years. At this location, the New Albany Shale is present and is described as greenish-gray fissile (layered) shale containing minor layers of dolomite, dolomitic quartz sandstone, and organic inclusions. Depending on location, the New Albany shale ranges in thickness from 85 to 150 ft. dipping southwest 20 to 43 ft. per mile. Generally,

shale is not a good source of water. Boring logs show that unconsolidated deposits in the area of the Webb Well Field extend from the ground surface to as much as 165 ft. in depth, or 570 ft. above msl. At one location approximately one-half (½) mile north, shale bedrock was observed at the bottom of the boring.

The Webb Well Field is located in the East Fork White River basin. Streams and rivers in this area, including Hurricane and adjacent creeks, drain into the Driftwood River which flows south - southwest in response to the regional bedrock slope (Fenelon and others, 1994). Boring logs from the immediate area demonstrate that the thick unconsolidated sand and gravel outwash deposits concentrated along Hurricane Creek serve as the primary aquifer and source of drinking water. Although ground water flow maps have been prepared by interested parties (refer to Appendix I, IWM Consulting Group LLC, 2007), maps do not show ground water flow conditions near the Webb Well Field. Static water elevations recorded on boring logs for the surrounding area range from 720 to 683 ft above msl. However, these elevations are not considered reliable and should not be used to interpret ground water flow directions and hydraulic gradients. As a result, the source(s) of ground water contamination affecting the Webb Well Field cannot be determined without additional information.

Ground water data collected during the field portion of this SI suggests that ground water flow in the area of the Webb Well Field is in a southeasterly direction (Appendix H).

The soils in the area of the Webb Well Field are fairly variable in nature however, they are generally permeable. These soils will allow for contamination to permeate to the underlying aquifer materials. The existence of contaminated soil and ground water on the former tomato plant property were established by sampling during this ESI event. The potential has been established for contamination from the property sampled to enter the aquifer and adversely impact targets such as the Webb Well Field municipal wells and private water use wells (Appendix H).

### **Section 4.3 Surface Water Pathway**

The nearest surface water body to the Webb Well Field is Hurricane Creek which runs through the Webb Well Field dissecting it between wells 2 and 3 and well number 5. Hurricane Creek runs within 30 feet of wells 2 and 3 to the east. Hurricane Creek flows south/southwest flowing into Young's Creek at Providence Park approximately 1.75 miles downstream from the Webb Well Field, then into the Big Blue River approximately 8.8 miles downstream from the well field. No surface water intakes exist within the 15-mile surface water pathway downstream from the site.

Overland flow from the former tomato plant property would be south to south-east into an unnamed ditch just north of Eastview Drive. Water in this ditch flows in a south-east direction for approximately two tenths of a mile before entering Hurricane Creek. This location is approximately 1/2 mile downstream of the nearest Webb Well Field well.

The surface water pathway discussion addresses three (3) potential threats; drinking water threat, human food chain threat, and the environmental threat.

#### **Section 4.3.1 Drinking Water Threat**

Residents of Franklin and the area surrounding Webb Well Field use ground water from municipal and private residential wells to service their consumptive needs. There are no surface water intakes within the 15-mile downstream surface water pathway from the Site (Appendix A). The threat to the public from contamination to drinking water via the surface water route is very unlikely.

#### **Section 4.3.2 Human Food Chain Threat**

The human food chain threat category specifically targets fisheries potentially affected by the migration of contaminants from the site. The primary fisheries within the 15-mile surface water pathway of the site are Hurricane Creek, Young's Creek, and Sugar Creek. The principle uses of these bodies of water are fishing and recreation.

There is no specific fish consumption advisory for Hurricane Creek or Young's Creek in Indiana. Sugar Creek, in Johnson County approximately nine (9) miles downstream from the probable point of entry (PPE), has a level 1 or 2 Fish Consumption advisory for mercury or PCBs in carp, Northern Hogsucker, Black Redhorse, Bluegill, Longear Sunfish, and Rock Bass of specific lengths (Appendix J).

Additionally, the entire State of Indiana has a fish advisory for all carp in Indiana streams of any length due to PCBs (Appendix J). The fish advisory for carp in the State of Indiana is due to either PCBs or mercury in the fish tissue. Neither of these contaminants is a contaminant of concern for the Webb Well Field contamination. The surface water and sediments do not appear to be at risk from contaminants of concern at the former tomato packing facility.

### **Section 4.3.3 Environmental Threat**

The Indiana Department of Natural Resources (IDNR) was contacted to determine if there were any significant natural features or endangered, threatened, and rare species located within one (1) mile of the subject site. According to IDNR, there are several sensitive environments located within the target distance limits of the Webb Well Field (Refer to Appendix J). Due to the low toxicity of the contaminants of concern at the former tomato packing facility, and their respective low potential to bioaccumulate, impacts to the sensitive environments located within the target distance limits of the site are not likely.

### **Section 4.4 Soil Exposure**

Subsurface soil samples were collected during the Webb Well Field ESI. The samples were collected in an attempt to identify potential sources in the study area for attribution of contaminants to the ground water. No surface soil samples, defined as soil samples obtained from zero to two feet in depth, were collected during this investigation or in past investigations of this site.

### **Section 4.5 Air Pathway**

No air samples were collected as part of this SI. A release of CLP analytes to the air was not documented during the investigation of the Webb Well Field site. Field screening instrumentation recorded no elevated contaminant readings while collecting the media samples. Presently, there is no historical documented release of contaminants to the air at the Site or nearby. There is a potential for vapor intrusion issues to exist nearer to a source of the contamination that was detected in the Webb Well Field, if that source can be found. Presently there is no known threat to the air pathway from the Webb Well Field.

## SECTION 5.0 SUMMARY

The town of Franklin utilizes ground water from both municipal and private wells as its only source of water for consumptive use. In 1988, cis-1,2-DCE contamination was discovered in the drinking water of municipal wells 2 and 3 in the Webb Well Field which services the town of Franklin and some surrounding area, in Johnson County. The Webb Wellfield is composed of 3 ground water wells (wells #2, #3, and #5) and is part of the larger Indiana American Water Company distribution system which serves Franklin and surrounding Johnson County. The well field has been removed from service and remains inactive since 2007.

The Webb Well Field ESI gathered information necessary to evaluate the site as a candidate for the NPL. Subsurface soils and ground water samples collected by direct push methods were collected to determine the presence of hazardous substances at potential source area locations and in the possible migration pathways. In addition, information was collected to confirm target populations and environments potentially at risk from the site.

It had been determined during the previous SI sampling event that residential wells were not likely a target for this investigation because no contaminants of concern were discovered in groundwater samples taken from nearby residential wells. Also, other well fields operated by IAWC in Johnson County had no history of contamination in their wells. Consequently, the focus of the ESI investigation was to determine a possible source for the contamination found in the Webb Well Field municipal wells.

Subsurface soil samples collected from the former Hougland tomato packing plant contained PCE, TCE, cis-1,2-DCE and trans-1,2-DCE. Grab ground water samples obtained from the former Hougland tomato packing plant also contained these contaminants. Cis-1,2-DCE began being detected in the Webb Well Field municipal wells 2 and 3 in 1988, with trans-1,2-DCE detections in 1989, and both continued to be detected until those wells were closed in 2007. No background samples contained any contaminants potentially attributable to those found in the Webb Well Field. Results from this ESI investigation indicate that the former Hougland tomato packing plant property may be a source of the contamination that was detected in the Webb Well Field municipal wells.

## References

Central Indiana Water Resource Partnership

[http://www.cees.iupui.edu/Research/Water\\_Resources/CIWRP/Publications/Reports/Watersheds-2003/Fall\\_Creek/index.htm](http://www.cees.iupui.edu/Research/Water_Resources/CIWRP/Publications/Reports/Watersheds-2003/Fall_Creek/index.htm)

Hydrogeologic Atlas of Aquifers in Indiana

US Geological Survey

Water-Resources Investigation Report 92-4142

The Hydrogeologic Framework of Marion County, Indiana: A Digital Atlas Illustrating Hydrogeologic Terrain and Sequence, edited by Steven E. Brown and Andrew J. Laudick. Indiana University Indiana Geological Survey, Open-File Study 00-14. Copyright 2000

U.S. Department of Agriculture Soil Conservation Service (USDA), 1979, Soil Survey of Johnson County.

IDEM Drinking Water Branch website.

Indiana American Water Company Water System Details

[https://myweb.in.gov/IDEM/DWW/JSP/WaterSystemDetail.jsp?tinwsys\\_is\\_number=408209&tinwsys\\_st\\_code=IN&wsnumber=IN5241005](https://myweb.in.gov/IDEM/DWW/JSP/WaterSystemDetail.jsp?tinwsys_is_number=408209&tinwsys_st_code=IN&wsnumber=IN5241005)

## Appendix A

### WEBB WELL FIELD

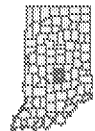
#### **FIGURES**

# Indiana-American Water Company Webb Wellfield, Site Location Map (Aerial), Franklin, Johnson County, IN

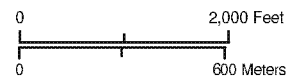



This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.  
**Mapped By:** Lorraine Wright,  
 Office of Land Quality  
**Date:** December 21, 2006

Johnson Co.



Franklin

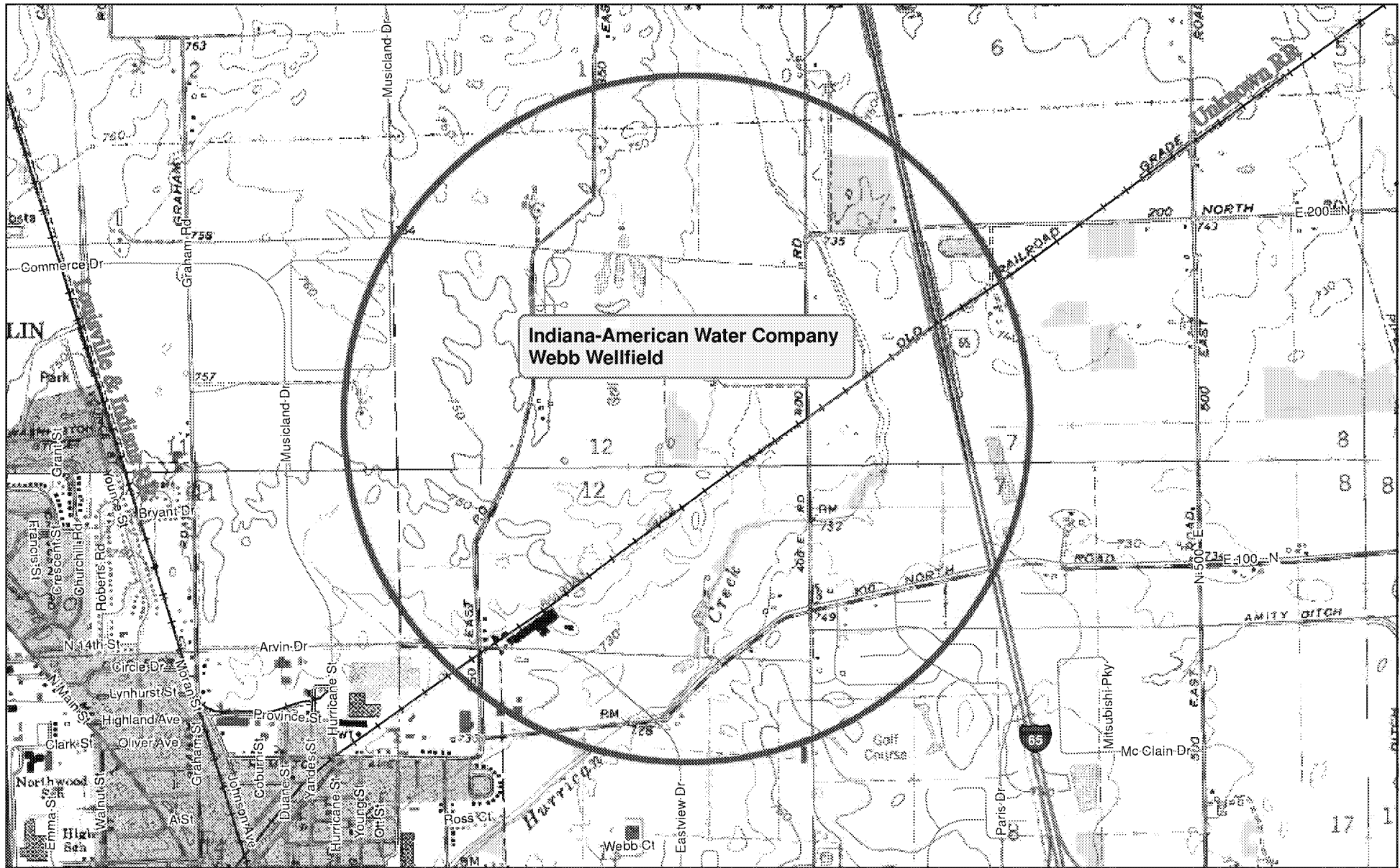


 Indiana-American Water Company Webb Wellfield



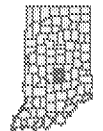
**Sources:**  
**Non Orthophotography**  
 Data - Obtained from the State of Indiana Geographic Information Office Library  
**Orthophotography** - Obtained from Indiana Map Framework Data, ([www.indianamap.org](http://www.indianamap.org))  
**Map Projection:** UTM Zone 16 N **Map Datum:** NAD83

# Indiana-American Water Company Webb Wellfield, Site Location Map (Topographic), Franklin, Johnson County, IN

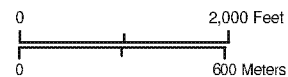



This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.  
**Mapped By:** Lorraine Wright,  
 Office of Land Quality  
**Date:** December 21, 2006

Johnson Co.



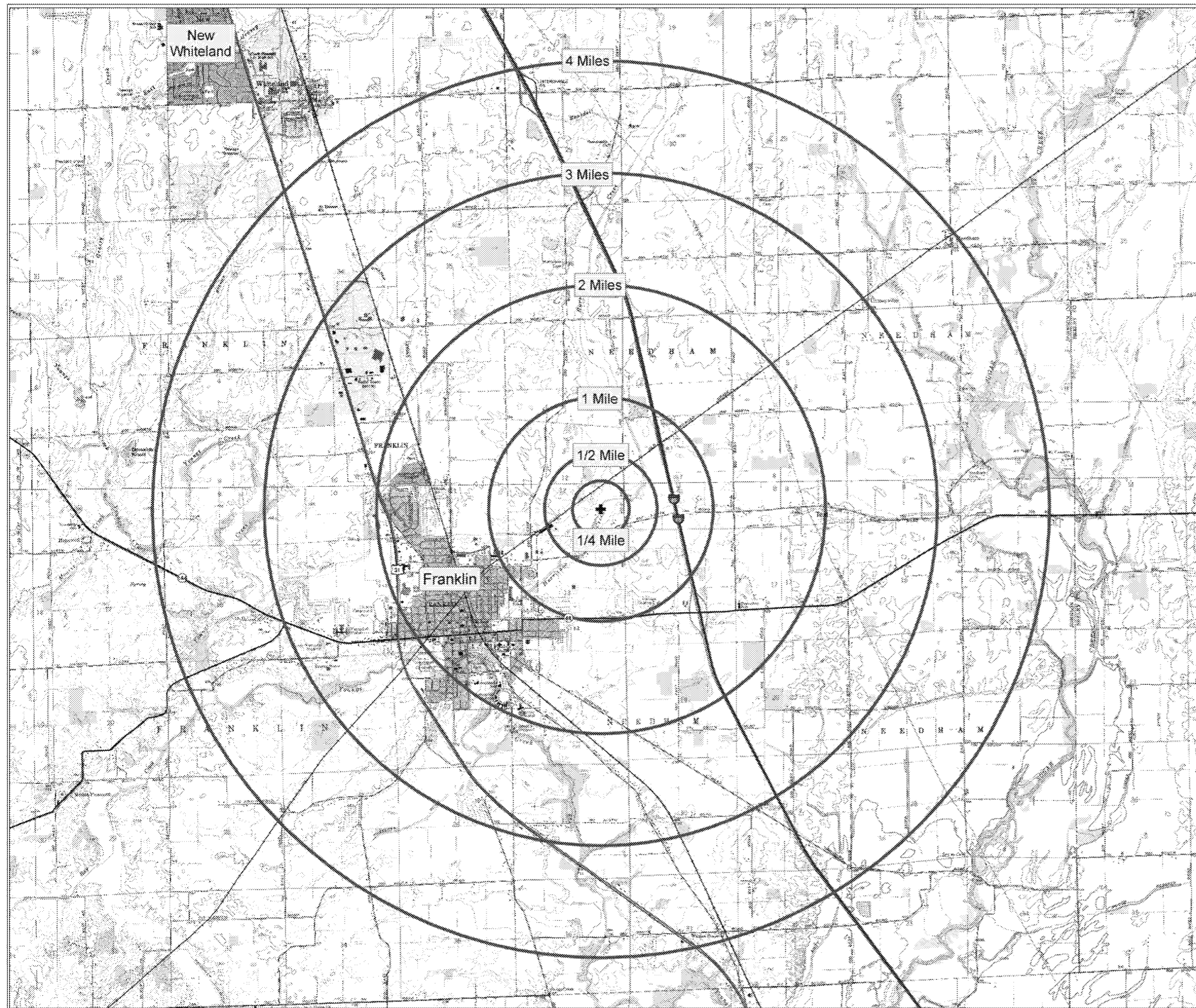
Franklin



 Indiana-American Water Company Webb Wellfield

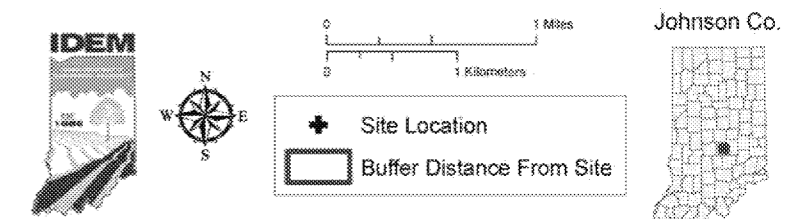


**Sources:**  
**Non Orthophotography**  
 Data - Obtained from the State of Indiana Geographic Information Office Library  
**Topographic Map** - Obtained from Indiana Map Framework Data, ([www.indianamap.org](http://www.indianamap.org))  
**Map Projection:** UTM Zone 16 N **Map Datum:** NAD83



## 4 Mile Radius Map, Indiana-American Water Company, Webb Wellfield, Franklin, Johnson County, IN

Buffer Distance	Adjusted Population
0.25 Mile	154
0.5 Mile	356
1 Mile	1132
2 Mile	6513
3 Mile	5982
4 Mile	5424
<b>Total Population</b>	<b>19561</b>



Mapped by: Lorraine Wright, Indiana Department of Environmental Management (IDEM), Office of Land Quality, Science Services Branch, Engineering and GIS Services  
Mapped on: January 27, 2010

Sources:  
IDEM 4 Mile Mapper Application  
USGS Digital Raster Graphics 1:24,000 topographic map  
Census block group 2000 total population  
Census 2000 County Boundaries  
Census 2000 City Boundaries

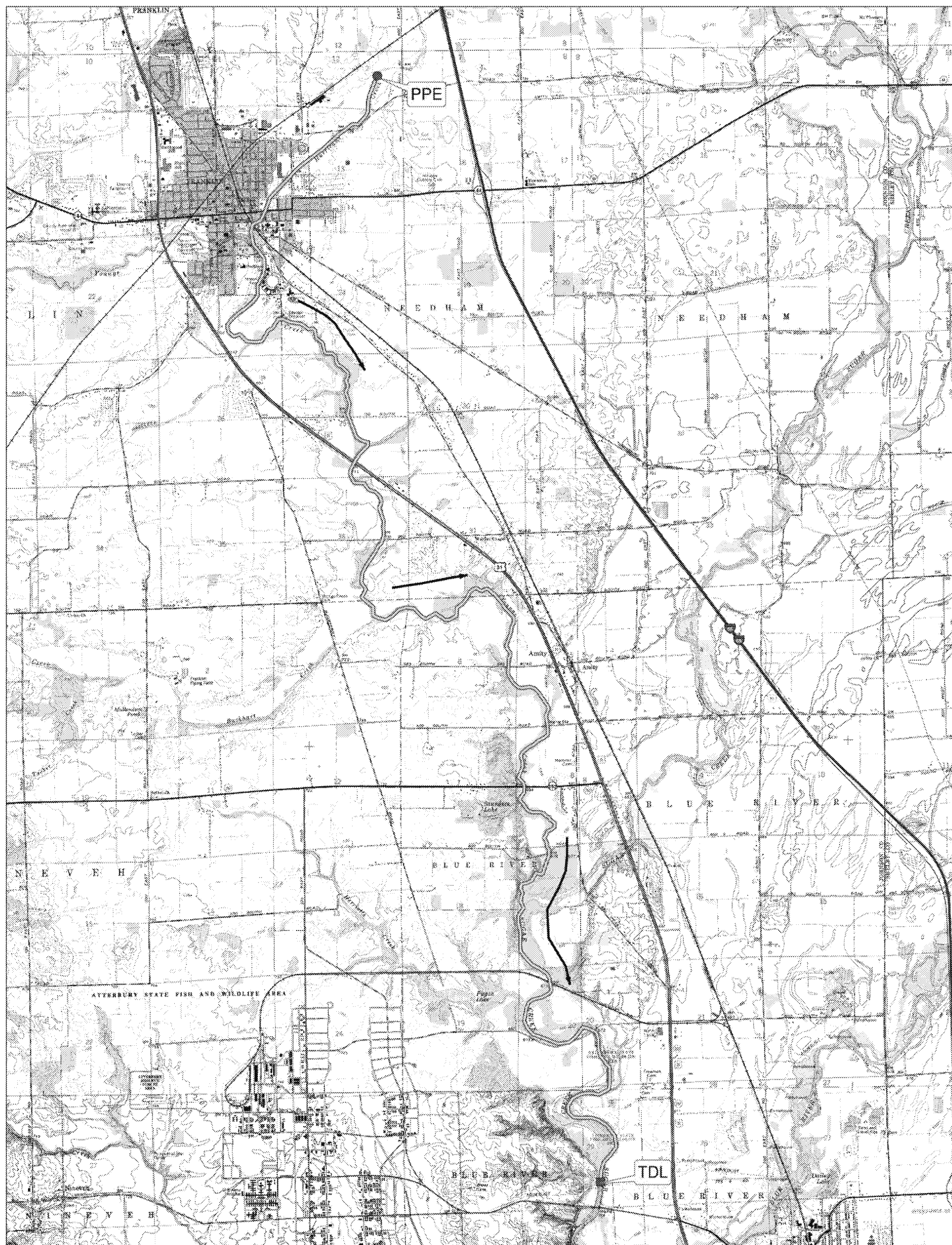
Disclaimer: This map does not represent a legal document. It is intended to serve as an aid in graphic representation only. It is not warranted for accuracy or suitability for any purpose. There are known sources of error in the population estimates presented on this map including:  
• The Census 2000 block group population data is out of date, and is itself an imperfect estimate of population.  
• The adjusted population estimate derived from the Census 2000 block group data assumes that the population is evenly distributed in each block group polygon

**Method of Estimating Population:** The adjusted population estimate is the sum of Census 2000 block group populations (TOTALPOP field) adjusted to include only the areas of the block groups contained inside the buffers. The adjusted population estimate assumes that the population is evenly distributed in each block group polygon. The specific procedure used in this analysis is as follows:  
1. The study area or site is drawn on screen by the user. The study area can be 1 or more polygons.  
2. The user selects the polygon(s) to include in the population estimate, and clicks a button to perform the rest of the analysis which is described in the following steps.  
3. The study area polygon(s) are buffered at .0001, 1/4, 1/2, 1, 2, 3 and 4 miles. The buffers are stored as polygons in a shapefile. In analyses with more than one study area polygon, intersecting buffers are dissolved to prevent overlapping buffers of the same buffer distance. This is necessary to prevent counting the population more than once in areas where buffers overlap.  
4. A spatial union is performed on the block group layer and the buffers layer resulting in a new layer containing polygons reflecting the combined geography of the block groups and the buffers. The new polygons inherit the attributes of the parent polygons from the block groups and buffers layers, including the population and area of the parent block group polygon. The area of the new polygons is not calculated automatically during the union.  
5. The geographic area of each new polygon is determined through a field calculation using a piece of visual basic code. See ArcGIS Help for a discussion of this process including the code.  
6. Following step 5, each new polygon has an attribute record containing the geographic area of the new polygon, the geographic area of the parent block group, and the TOTALPOP field population value from the parent block group. Dividing the area of the new polygon by the area of the parent block group and multiplying that value by the population yields a population estimate for each new polygon. For example, Block Group A with an area of 10 square miles and a population of 200 people is split into 2 polygons by the 4 mile buffer ring. The area of the block group inside the 4 mile buffer is 2 square miles, or 20% of the area of the original 10 square mile block group. Assuming the population is uniformly distributed in Block Group A, the population from Block Group A that is within the 4 mile buffer ring should also be 20% of the total population for the block group. Twenty percent of 200 is 40 people. ( $2 \div 10 \times 200 = 40$ )  
7. The new population figures from step 6 are automatically summed and compiled into a table that is displayed on the print layout. The automatic summing process completed by the 4 Mile Mapper application produces population estimates that include the entire population from the site out to each buffer distance (e.g. 0 to 0.25, 0 to .50, 0 to 1, 0 to 2, ...). The map author manually recalculates these figures by taking the population for each buffer distance and subtracting the population of the next smaller buffer distance to provide a population figure for the donut area bounded by each pair of consecutive buffer distances (e.g. 0 to 0.25, 0.25 to 0.5, 0.5 to 1, 1 to 2, ...). The population table is labeled and revised to reflect these values, and a total population figure is added to reflect the population from the site out to the 4 mile buffer distance

This map was created using 4 Mile Mapper v1.0.0, a customized application developed in ArcGIS v9.1 in the Office of Land Quality, Science Services Branch, Engineering and GIS Section by Mr. Raju Gopin, Indiana Governor's Public Service Intern. 4 Mile Mapper v1.0.0 was created during the Summer of 2004.

# 15 Mile Surface Water Pathway Map

## Indiana-American Water Company, Webb Wellfield, Franklin, Johnson County, IN



### Sources:

#### Non Orthophotography

**Data** - Obtained from the State of Indiana Geographic Information Office Library. The PPE and TDL were digitized using the topographic map and based on the Project Manager's description.

**Topographic Map** - Obtained from Indiana Map Framework Data, ([www.indianamap.org](http://www.indianamap.org))

**Map Projection:** UTM Zone 16 N **Map Datum:** NAD83

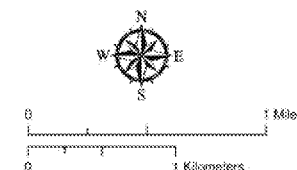
This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

**Mapped By:** Lorraine Wright, Office of Land Quality

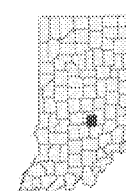
**Date:** January 26, 2010



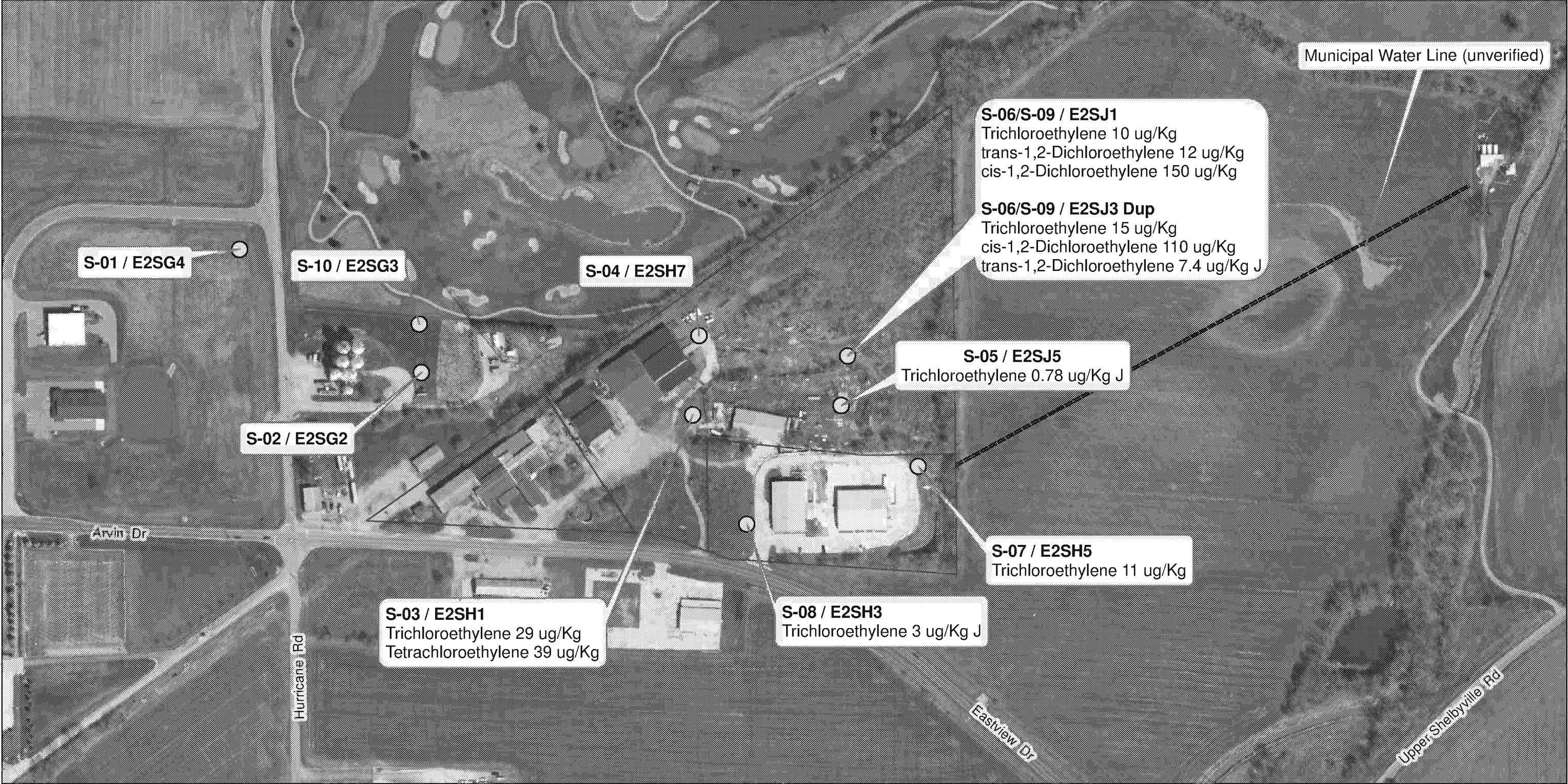
- Probable Point of Entry (PPE)
- Target Distance Limit (TDL)
- Flow Direction
- 15 Mile Surface Water Pathway



Johnson Co.

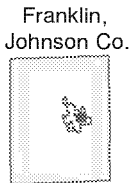
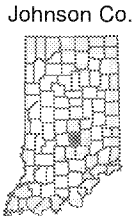


# Sample Location and Soil Concentration Map - Expanded Site Inspection, Indiana-American Water Company - Webb Wellfield, Franklin, Johnson County, IN (EPA ID No. INN000510423)

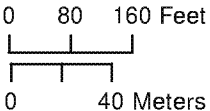


This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

**Mapped By:** Lorraine Wright,  
Office of Land Quality  
**Date:** February 7, 2013



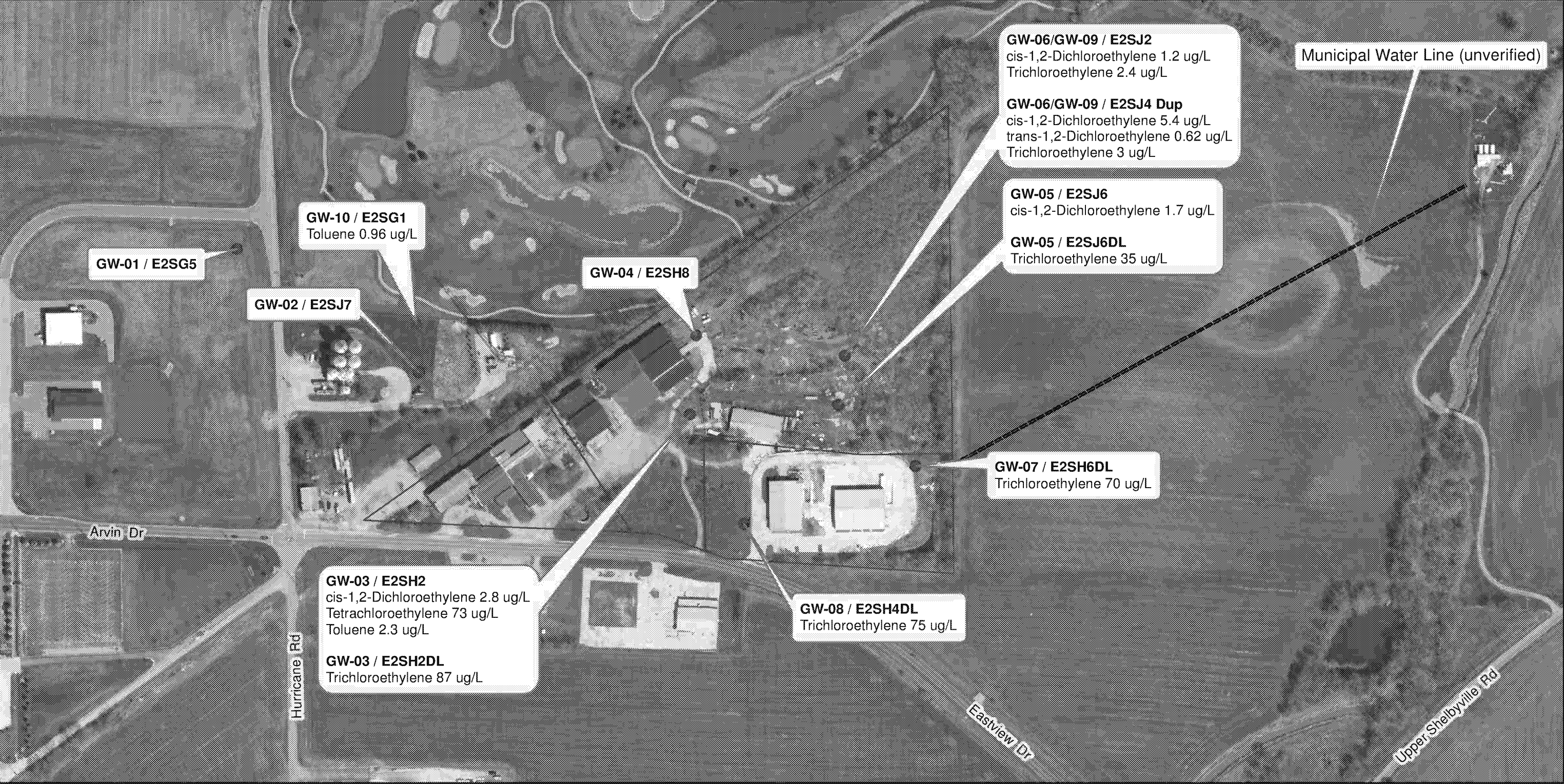
- Soil Sample Location (November 2012)
- ==== Municipal Water Line (unverified)
- Parcel



**Non Orthophotography Data -**  
Source: State of Indiana Geographic Information Office Spatial Database Engine. The sample location coordinates were collected using GPS. The Municipal Water Line was digitized and the location is unverified. Only chemical concentrations of concern are shown on the map. The J value is estimated.

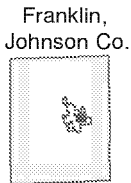
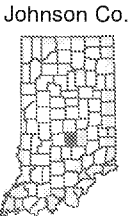
**Orthophotography -**  
Source: Indiana Map Framework Data 2007 Orthophoto (6 inch).  
([www.indianamap.org](http://www.indianamap.org))  
**Map Projection:** UTM Zone 16 N **Map Datum:** NAD83

# Sample Location and Groundwater Concentration Map - Expanded Site Inspection, Indiana-American Water Company - Webb Wellfield, Franklin, Johnson County, IN (EPA ID No. INN000510423)



This map is intended to serve as an aid in graphic representation only. This information is not warranted for accuracy or other purposes.

**Mapped By:** Lorraine Wright,  
Office of Land Quality  
**Date:** February 7, 2013



●

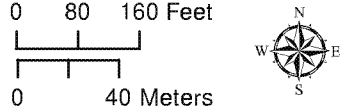
Groundwater Sample Location (November 2012)

====

Municipal Water Line (unverified)

□

Parcel



**Non Orthophotography Data -**  
Source: State of Indiana Geographic Information Office Spatial Database Engine. The sample location coordinates were collected using GPS. The Municipal Water Line was digitized and the location is unverified. Only chemical concentrations of concern are shown.

**Orthophotography -**  
Source: Indiana Map Framework Data 2007 Orthophoto (6 inch).  
([www.indianamap.org](http://www.indianamap.org))  
**Map Projection:** UTM Zone 16 N **Map Datum:** NAD83

## Appendix B

### WEBB WELL FIELD

#### TABLES

**Table 1: Subsurface Soil Sample Location and Comment Table**

<b>WEBB WELL FIELD</b>				
<b>Soil Sample Number</b>	<b>Sample Number</b>	<b>Location</b>	<b>Sample Depth or Interval Depth (ft)</b>	<b>Comment</b>
S-1	E2SG4	1691 Amy Lane	NR	Background and Field MS/MSD sample
S-2	E2SG2	K & L Grain Inc.	12	Background
S-3	E2SH1	Former Tomato Plant Proprety 1130 E. Eastview Dr.	22-23	Potential Source
S-4	E2SH7	Former Tomato Plant Proprety 1130 E. Eastview Dr.	17	Potential Source
S-5	E2SJ5	Former Tomato Plant Proprety 1130 E. Eastview Dr.	10.5-11.5	Potential Source
S-6	E2SJ1	Former Tomato Plant Proprety 1130 E. Eastview Dr.	7.5-8.5	Potential Source
S-7	E2SH5	Former Tomato Plant Proprety 1130 E. Eastview Dr.	12	Potential Source
S-8	E2SH3	Former Tomato Plant Proprety 1130 E. Eastview Dr.	11-12	Potential Source
S-9	E2SJ3	Former Tomato Plant Proprety 1130 E. Eastview Dr.	7.5-8.5	Duplicate of S-6 Potential Source
S-10	E2SG3	K & L Grain Inc.	7-8	Background